



Journal of Ayurveda & Holistic Medicine

www.jahm.co.in

eISSN-2321-1563

ORIGINAL RESEARCH ARTICLE - CLINICAL RESEARCH

OPEN ACCESS

A PRE-TEST AND POST-TEST CLINICAL STUDY DESIGN TO EVALUATE ARDHAMATRIKA NIROOHA BASTI AND NIMBAMRUTHADI ERANDA VIRECHANA IN HYPERURICEMIA W.S.R. TO VATARAKTHA PRASHANTH A.S.^{1*}

Abstract

Background: Vatarakta is caused by vitiated *rakta* and *vata* in an Avarana samprapti. The Nidana, Lakshana and Samprapthi of Vatarakta are having similarity with clinical presentation of Hyperuricemia / Gout explained in the modern medical science which is characterized by painful swelling of the joints and tenderness, redness in the affected areas. Gout pains are usually developed in the joints of the legs, especially the big toe. Apart from the big toe, other joints like ankle, toe heels, hand, wrist and elbows can also be affected. Purine is one of the nitrogen bases in the human body which is converted into uric acid & is eliminated through urination. The excessive deposit of uric acid in the body due to improper metabolism or reduced renal function will lead to gouty arthritis. **Methods:** Study was conducted on 40 subjects of Vatarakta, taken into two groups A and B, with 20 subjects in each group. Both groups received Amapachana with Hareetakyadi churna. Group A received Ardhamatrika Basti in Kala Basti Schedule. Group B received Snehapana with Panchatiktaguggulu ghruta and virechana with Nimbamruthadi eranda. In both groups Abhyanga is done with Bala-guduchyadi taila. After Shodhana, Amrutha Guggulu and Kokilaksha kashaya is given as shamanoushadhi. **Results:** The clinical study showed significant improvement in the signs & symptoms of Vatarakta, thereby improving the quality of life of the patients. Basti provided highly significant results in all symptoms and serum Uric acid. Virechana provided highly significant results in all symptoms whereas, in serum uric acid levels virechana showed not so significant results. **Conclusion:** After systematic and prompt clinical trial, the following conclusions were drawn taking into consideration observations & Results. As vataraktha / Hyperuricemia being a metabolic disorder; through proper Ayurvedic treatment principles, we can manage the condition very effectively, through sodhana and shaman chikitsa.

Keywords: Vatarakta, Gouty arthritis, Basti, Virechana, Uric acid

^{1*}Professor and Principal, Dept. of Kayachikitsa, Ayurveda Mahavidyalaya, HUBLI, India

Corresponding Author Email id: drprashanthas@gmail.com

Access this article online: www.jahm.co.in

Published by Atreya Ayurveda Publications under the license CC-by-NC-SA.

INTRODUCTION:

Ayurveda, a system of natural healing from the very ancient vedic culture of India is more than merely a system of treating illness but is the science of life that provides a body of wisdom, guidelines on ideal routines, diet and behaviour. Derangement of function within the body may occur due to multiple causes like diet, life style or environment. The word Vatarakta is made up of two words Vata and Rakta this shows the uniqueness in Vatarakta as compare to other vatavyadhis. It signifies the association of vata dosh with vitiated rakta dhatu. In Vatarakta Vata dosha and Rakta Dhatu are vitiated simultaneously.^[1,2,3,4,5] Vatarakta is caused by vitiated *rakta* and *vata* in an Avarana samprapti. The Nidana, Lakshana and Samprapthi of Vatarakta are having similarity with clinical presentation of Hyperuricemia / Gout explained in the modern medical science which is characterized by painful swelling of the joints and tenderness, redness in the affected areas. Gout pains are usually developed in the joints of the legs, especially the big toe. Apart from the big toe, other joints like ankle, toe heels, hand, wrist and elbows can also be affected.^[6] Purine is one of the nitrogen bases in the human body which is converted into uric acid & is eliminated through urination. The excessive deposit of

uric acid in the body due to improper metabolism or reduced renal function will lead to gouty arthritis. The enzyme Xanthine Oxide is responsible for converting the purine into uric acid, which eliminated through urination. The excessive deposit of uric acid in the body due to improper metabolism or reduced renal function will lead to Gouty Arthritis. Intakes of more purine rich food, obesity, drugs for hypertension, intake of alcohol, family history are some of the reasons for improper metabolism.^[7] In the present era due to rapid modernization in the developing countries like India makes the culture of fast food, sedentary changes in life style etc. has given rise to increase in the number of joint disorders. Among the joint disorders *Vatarakta* / Gouty Arthritis considered to be serious of its chronicity. In the line of treatment of Gouty Arthritis. The treatment of *Vatarakta* is well explained in *Ayurveda* including *Shodhana Chikitsa*, *Shamana Chikitsa*, and *Rasayana Prayoga*. The *Shodhana* procedures like *Basti*, *Raktamokshana*, and *Virechana* are considered as most effective line of treatment. Among the *Shodhana* procedures *Basti* and *Virechana* is more emphasized by *Acharyas*. *Vatarakta* is one of the *Madhyama Rogamarga* the best treatment for *Madhyama Rogamarga* is *Basti* because it will mainly affect in *Asthi*, *Sandhi*, *Snayu*.^[8,9] In this study,

100 patients were selected randomly and placed into two groups, Group A and Group B, with 50 subjects in each group. Group-A received *Amapachana* with *Hareetakyadi Churna*^[10], *Kala Basti* with *Dasamoola Kashaya*, and *Balaguduchyadi Taila*^[11] (*Anuvasana*) and *Balaguduchyadi Taila* for *Abhyanga* with *Mridu Swedana* followed by *Shamanaoushadhis - Amritadi guggulu*^[12] 1Tab bd with *Kokilakshadi Kashaya*^[13] (20 ml) bd as *Anupana*. Group-B received *Amapachana* with *Hareetakyadi Churna*, *Snehapana* with *Panchatikta Guggulu Ghrita*^[14] and *Virechana* with *Nimbamritadi Eranda Taila*^[15] and *Balaguduchyadi Taila* for *Abhyanga* with *Mridu Swedana* followed by *Shamanaoushadhis - Amrita Guggulu* 1Tab bd with *Kokilakshadi Kashayam* (20 ml) bd as *Anupana*. The follow up period was 48 days for Group A and 30 days for Group B. The assessment was done before the treatment and soon after the completion of the course of the treatment thus the total assessment was done based on change in improvement observed, before and after the treatment.

In the present the culture of fast food, sedentary life style etc has given rise to increase in the number of serious chronic joint disorders like gouty arthritis. In the general population the prevalence of gouty arthritis is between 1.3 to 3.7 % and it is most common

among men. The treatment of Vatarakta is well explained in Ayurveda including Shodhana, Shamana and Rasayana Chikitsa. Shodhana is considered as the best line of treatment for Vatarakta & among them Basti and virechana are considered as the main line of treatment.

OBJECTIVES:

1. To evaluate and compare the efficacy of *Ardhamatrika Basti* and *Virechana* in *Vatarakta*.
2. To assess the effect of *Basti* and *Virechana* along with *Shamanoushadi* on raised uric acid level in gouty arthritis.

METHODS AND MATERIALS

Study design: A Comparative Clinical Trial Study.

Methods:

Study was conducted on 40 subjects of Vatarakta, taken into two groups A and B, with 20 subjects in each group. Both groups received *Amapachana* with *Hareetakyadi churna*. Group A received *Ardhamatrika Basti* in *Kala Basti* Schedule. Group B received *Snehapana* with *Panchatiktaguggulu ghruta* and *virechana* with *Nimbamruthadi eranda*. In both groups *Abhyanga* is done with *Balaguduchyadi taila*. After *Shodhana*, *Amrutha Guggulu* and *Kokilaksha kashaya* is given as *shamanoushadhi*.

Clinical symptoms like Sandhi Graha (Stiffness of Joint), Sandhi Shoola (Joint Pain), Shotha (Inflammation), Vaivarnyata (discoloration), Sparsha Asahatva (Tenderness) and Serum Uric acid assessment were carried out before and after treatment and results are obtained.

Inclusion Criteria:

1. Subjects presenting with clinical features of *Vatarakta/ Gouty Arthritis*.
2. Subjects with chronicity of disease more than 6 months and less than 5 yrs.
3. Subjects of either sex between age group of 20-70 yrs.
4. Subjects fit for *Basti Karma* and *Virechana Karma*.
5. Subject showing the uric acid level above 6mg/dl (Above Biological Range).

Exclusion Criteria

- Subjects with uncontrolled diabetes, systemic disorders and endocrine disorders.
- Subjects with autoimmune disease of joints.
- Subjects with infection and communicable diseases.
- Subjects not fit for *Basti Karma* and *Virechana Karma*.

Parameters of the Study Subjective Parameters

- *Sandhi Graha* (Stiffness of Joint)
- *Sandhi Shoola* (Joint Pain)
- *Shotha* (Inflammation)

Objective Parameters

- Serum Uric acid before and after treatment.
- *Vaivarnya* (Colour of Affected Joint).
- *Sparsha Asahatva* (Tenderness).
- McGill pain scale for pain assessment

Table 1: Grading of Objective parameters

<i>Vaivarnya</i> (Discolouration)	No discolouration	0
	Occasional, relieved by its own.	1
	Present, but relieved by relief in swelling	2
	Persistent, not relieved by medication	3
<i>Sparsha asahatva</i> (tenderness)	no tenderness	0
	patient complains of pain	1
	patient complains of pain and winces	2
	patient complains of pain, winces and withdrew joint	3

Table 2: Grading of Subjective parameters

Parameter	Finding	Points
<i>Sandhi Shula</i> (pain)	None	0
	Mild	1
	Moderate	2
	Severe	3
	Extreme	4
<i>Sandhi Graha</i> (Stiffness)	No stiffness	0
	Stiffness occasional, relieved by its own	1
	Stiffness relieved by movements	2
	Stiffness relieved by medication	3
<i>Shotha</i> (swelling)	None	0
	Slight	1
	Moderate	2
	bulging beyond joint margins	3

Table 3: Interventions in Both Groups

Group A :	Ardhamatrika Basti in Kala Basti Schedule
<i>AmaPachana</i>	<i>Hareetakyadi Choorna</i> for <i>AmaPachana</i> till the appearance of <i>Nirama lakshana</i> . Dose – 5gm twice a day with <i>Ushnajala Anupana</i> Before Food.
<i>Sthanika Abhyanga</i> and <i>Bashpa Swedana</i>	<i>Balaguduchyadi Taila</i>
<i>Anuvasana Basti:</i>	<i>Balaguduchyadi Taila</i> – 60ml
<i>Ardhamatrika Nirooha Basti:</i>	<i>Dasamoola Kashayam</i> 500ml <i>Sneha- Balaguduchyadi taila-60ml</i>
	<i>Kalka-shatahva-15gms</i> <i>Lavanam- saindhava lavana-5gms</i> <i>Makshikam-30ml</i> Dosage: Depend upon the <i>Roga</i> and <i>Rogi Bala</i> Duration : 16 Days <i>Pariharakala</i> : 32 Days
<i>Shamanoushadi</i>	<i>Amrita guggulu</i> (500mg) 1tab bd with <i>Kokilaksha Kashaya</i> 20ml bid as <i>Anupana</i> . Follow up : 48 Days
Group B	<i>Virechana</i> with <i>Nimbamritadi Eranda Taila</i>
<i>AmaPachana</i>	<i>Hareetakyadi Choorna</i> for <i>Ama Pachana</i> till the appearance of <i>Nirama Lakshana</i> . Dose – 5gm twice a day with <i>Ushnajala Anupana</i> Before Food.

<i>Snehapana:</i>	<p><i>PANCHATIKA GUGGULU GHRITA.</i></p> <p><i>HrasiyasiMatra of Sneha i.e. 30ml</i></p> <p>In increasing dosage till <i>Samyak Snigdha Lakshanas</i> seen upto 7 days</p> <p><i>Mridu koshta-120ml Madhyama koshta -180ml Krura koshta -240ml</i></p> <p><i>Anupana- Ushnodhaka</i></p> <p><i>Kala - Ananna Kala</i></p>
<i>Abhyanga and Bashpaswedana</i>	<i>Balaguduchyadi taila</i>
<i>Virechana</i>	<p><i>Nimbamritadi Eranda Taila</i></p> <p>Dose – according to <i>Koshtha</i> of the patient</p> <p><i>Mridu koshta -30ml Madhyama koshta -45ml Krura koshta - 60ml</i></p>
<i>Samsarjana karma:</i>	<i>Samsarjana Karma</i> was followed based on <i>Shuddhi</i>
<i>Shamanoushadi</i>	<p><i>Amrita guggulu (500mg) 1tab bd with Kokilaksha Kashaya 20ml bid as</i></p> <p><i>Anupana.</i></p> <p>Follow up : 30 Days</p>

OBSERVATIONS

Out of 100 subjects studied in this series all the subjects *i.e.* 100 subjects were reported with *Sandhishoola, Sandhishotha*, 93 subjects were reported with *Sparshaasahatva*, 86 subjects were reported with *Sandhigraha* and 77 subjects were reported with *Vaivarnyatha*. And

maximum of 33 subjects were having S. Uric Acid between 7.1 to 9 mg/dl, 20 subjects were having S. Uric Acid between 9.1 to 10 mg/dl. 08 subjects were having S. Uric Acid between 10.1 to 11 mg/dl and 06 subjects were having S. Uric Acid between 06.1 to 07 mg/dl.

Table 4: Serum uric acid level of 100 subjects of *vatarakta*

S. Uric Acid	Group A	Group B	Total	%
6.1 to 7	04	02	06	06 %
7.1 to 8	17	16	33	33 %
8.1 to 9	15	18	33	33 %
9.1 to 10	12	08	20	20 %
10.1 to 11	02	06	08	08 %

Table 5: Symptoms (lakshana) wise distribution of 100 subjects of *vatarakta*

Cardinal Symptoms	Group A	Group B	Total	%
<i>Sandhishoola</i>	50	50	100	100
<i>Sandhishotha</i>	50	50	100	100
<i>Sandhigraha</i>	40	46	86	86
<i>Sparshasahatva</i>	45	48	93	93
<i>Vaivarnata</i>	37	40	77	77

Table 6: distributions according to the affected joints of 100 subjects of vatarakta

Joints	Group A	Group B	Total	%
<i>Hasta parva Sandhi</i> (Interphalangeal) (Hand)	18	16	34	34
<i>HastaSamudgaSandhi</i> (Metacarpophalangeal)	12	10	22	22
<i>Manibandha</i> (Wrist)	15	18	33	33
<i>Koorpara</i> (Elbow)	10	12	22	22
<i>Pada parva Sandhi</i> (Interphalangeal) (feet)	20	19	39	39
<i>Pada Samudga Sandhi</i> (Metatarsophalangeal)	15	16	31	31
<i>Gulpha</i> (Ankle)	19	21	40	40
<i>Janu</i> (Knee)	26	23	49	49

RESULTS:

The clinical study showed significant improvement in the signs & symptoms of Vatarakta, thereby improving the quality of life of the patients. Basti provided highly

significant results in all symptoms and serum Uric acid. Virechana provided highly significant results in all symptoms whereas, in serum uric acid levels virechana showed not so significant results.

Table 7: effect of therapy on subjective parameters in Group A

Parameter	No. Of Patients	Mean		Mean Diff	% relief	S.D.	S.E.	't' value	'p' value	Remarks
		BT	AT							
<i>Sandhi Graha</i>	50	2.64	0.66	1.98	75%	0.616	0.087	22.73	<0.001	S
<i>Sandhi Shoola</i>	50	2.22	0.32	1.9	85.58%	0.670	0.094	20.04	<0.001	S
<i>Sandhi shotha</i>	50	0.6	0.16	0.44	73.33%	0.803	0.113	3.869	<0.001	S

Table 8: effect of therapy on objective parameters in Group A

Parameter	No. Of Patients	Mean		Mean Diff	% relief	S.D.	S.E.	't' value	'p' value	Remarks
		BT	AT							
Serum Uric acid	50	8.516	4.854	3.662	43%	1.0351	0.146	25.01	<0.001	S
Affected Joint Colour	50	1.18	0.16	1.02	86.44%	0.836	0.118	8.622	<0.001	S
<i>Sparsha Asahatva</i> (Tenderness).	50	1.82	0.18	1.64	90.10%	0.741	0.104	15.63	<0.001	S
MC GILL PAIN SCALE	50	3.21	0.92	2.2	71.34%	0.721	0.101	21.58	<0.001	S

Table 9: effect of therapy on objective parameters in Group B

Parameter	No. Of Patients	Mean		Mean Diff	% relief	S.D.	S.E.	't' value	'p' value	Remarks
		BT	AT							
<i>Sandhi Graha</i>	50	2.16	0.98	1.18	54.62%	0.589	0.083	14.21	<0.001	S
<i>Sandhi Shoola</i>	50	1.96	1	0.96	48.97%	0.527	0.074	12.86	<0.001	S
<i>Sandhi Shotha</i>	50	0.86	0.24	0.62	72.09%	0.718	0.101	6.12	<0.001	S

Table 10: effect of therapy on objective parameters in Group B

Parameter	No Of Patients	Mean		Mean%		S.D.	S.E.	't' value	'p' value	Remarks
		BT	AT	Diff	Relief					
Serum Uric acid	50	8.74	5.87	2.86	32.83%	1.017	0.143	19.87	<0.001	S
Affected Joint Colour	50	1.28	0.42	0.86	67.18%	0.632	0.089	9.60	<0.001	S
<i>Sparsha Asahatva</i> (Tenderness).	50	1.58	0.44	1.14	72.15%	0.721	0.102	11.17	<0.001	S
MC GILL PAIN SCALE	50	2.82	1.38	1.44	51.06%	0.875	0.123	11.63	<0.001	S

Table 11: comparative efficacy of therapies on objective and Subjective parameters in Group A and Group B using unpaired student's 'T' test

Assessment Parameters		No. Of Patients	Group A			Group B			Unpaired t Test (GroupAvs Group B)		Re- mark s
			Mean	S.D.	S.E.	Mean	S.D.	S.E.	't' value	'p' value	
				(+/-)	(+/-)		(+/-)	(+/-)			
Serum Uric acid		50	3.66	1.03	0.14	2.86	1.01	0.14	3.85	<0.05	S
Affected Joint Colour		50	0.86	0.63	0.08	1.02	0.83	0.11	1.07	>0.05	NS
Sparsha Asahatva (Tenderness).		50	1.14	0.72	0.10	1.64	0.74	0.10	3.38	<0.05	S
Assessment	No. Of	Group A			Group B			Unpaired t Test (Group A vs GroupB)			Rema

Parameters	Patients	Mean	S.D.	S.E.	Mean	S.D.	S.E.	't' value	'p' value	rks
			(+/-)	(+/-)		(+/-)	(+/-)			
<i>Sandhi Graha</i>	50	1.18	0.58	0.08	1.98	0.61	0.08	6.57	<0.05	S
<i>SandhiShoola</i>	50	0.96	0.52	0.07	1.9	0.67	0.09	7.71	<0.05	S
<i>SandhiShotha</i>	50	0.62	0.71	0.10	0.44	0.80	0.11	1.17	>0.05	NS

Table 12: effect of study on both the groups

Remarks	Group A	Group B	Total	Percentage
Marked relief Above 75 %	3	0	3	03%
Moderate relief 50-75%	43	15	58	58%
Mild relief 25%-50%	4	34	38	38%
No relief Below 25%	0	1	1	01%

DISCUSSION:

The subjects of Group A showed better results in all parameters compared to Group B. So *Basti* has a much contributory effect in *Vatarakta* / Gouty Arthritis even though *Virechana* also has a significant role in the disease *Vatarakta* / Gouty Arthritis.

Eventhough *Basti* being a *Shodhana Chikitsa* for *Vata Dosa* it will act on *Tridosha*, *Saptadhatu*s and *Malas*. *Basti* is termed as *Ardha Chikitsa*. In *Vatarakta* almost all *Acharyas* explains about *Virechana* or *Raktamoksha* as the primary line of treatment as *rakta* being the *Avaraka* here and *Virechana* is the ideal treatment for *Rakta Dushti*. But if we consider the later stages of *Vatarakta* the predominant *Dosa* is *Vata* than

Rakta. So *Basti* will be more effective in *Vatarakta* when it is in a chronic stage. Here *Dasamoola Sidha Arthamatrika Basti* will act as both *Vedanasthapaka* and *Shodhahara* thus reduce the symptoms of *Vatarakta*.

CONCLUSION:

After systematic and scientific trial, the following conclusions had been drawn taking into consideration observations & Results. In present study as per the clinical data, *Basti* and *Virechana* are definitely effective in the management of *Vatarakta*, but by assessing the percentage wise improvement *Basti* shows more effective than *Virechana*.

Acknowledgement: We acknowledge the Advanced Research Wing, RGUHS, Bangalore for the financial assistance.

REFERENCES:

1. SKD, *Shabdhakalpadruma* edited by Devaraja Radhakanta, Delhi, Naga Publisher, part II. Page no 25; Pp –142
2. *Charaka; Charaka Samhita*. With. Deepika Teeka of Chakrapanidatta, edited by A.V. Sri Lalachandra Shastri Vaidya, *Agnivesa's Charaka Samhita*, with *Ayurveda* ; Reprint Edition, Krishnadas Academy, Varanasi 2000, Chikitsa Stana 29/1. Page no 627 ; Pp - 738
3. *Charaka Charaka Samhita*. With Deepika Teeka of Chakrapanidatta, edited by A.V. Sri Lalachandra Shastri Vaidya, *Agnivesa's Charaka Samhita*, with *Ayurveda* ; Reprint Edition, Krishnadas Academy, Varanasi 2000, *Sutrasthana* Edition, Krishnadas Academy, Varanasi, 2000 *Chikitsa Stana* 29/1. Page no 627; Pp -738
4. *Madhavacharya* M.Ni with (Md. Ks teeka) edited by Sri Sudarshana Shastri, *Madhavakara's Madhava Nidanam* with *Madhukosha* Commentary, 18th Edition, Chaukhamba Sanskrit Samsthan, Varanasi, 1988 23 rd chapter; Page no 499 - 505 ; Pp – 568
5. *Vagbhata; Ashtanga Hridaya* Acharya Hari Shastri Paradakara Vaidya, with commentary of Sarvangasundari of Arunadatta and *Ayurveda Rasayana* of Hemadri, 9th Edition, Chaukhamba Orientalia Publishers, Varanasi, Uttara Pradesh, 2002. Nidana sthana 16/3 Page no 535; Pp – 956
6. <https://www.mayocicrg/diseasesconditions/gout/symptomscauses/syc-20372897->
7. <https://en.m.wikipedia.org/wiki/Purine>
8. *Yoga Ratnakara*. Indradev Tripathi, by Laxmipathi Shastri's with Vaidhyaprabha Commentary, 1st Edition, Krishnadas Academy, Varanasi, 1998. . Y.R.Vataraktadhikara, Ma.Ni.23/14-18, Bha.Pra.29/15- 17Page no 623-635; Pp -672
9. *Charaka; Agnivesa's Charaka Samhita* Sri Lalachandra Shastri Vaidya, with *Ayurveda Deepika Teeka* of Chakrapanidatta, Reprint Edition, Krishnadas Academy, Varanasi, 2000. Chikitsa sthana 29/43 Page no 630; Pp -738
10. *Charaka Samhita* of Agnivesha, By Vaidya H.C.Kushwaha Edited with '*Ayurveda Deepika*' Hindi Commentary, 2nd volume, Chaukhamba Orientalia, Varanasi. 2012, Chikitsasthana 1st chapter 1st pada, shloka no.25, page no-05.
11. *Sahasrayogam*, Dr. K Nishteshwar & Dr. K Vidyanath, Chwkhamba Sanskrit series office, Varanasi. Taila prakaranam No-11, page no 116.
12. *Sahasrayogam*, Dr. K Nishteshwar & Dr. K Vidyanath, Chwkhamba Sanskrit series office, Varanasi. Vati prakaranam No-2, page no 304-305.
13. *Bhaishajya Ratnavali* of Shri Govinda Dasji; Volume 2; Edited by Bhisagratna Shri Brahmasankar Mishra; Vataraktharogadhikara; Chapter 27; Page No: 240 .
14. *Sahasrayogam*, Dr. K Nishteshwar & Dr. K Vidyanath, Chwkhamba Sanskrit series office, Varanasi. Ghrita prakaranam No-3, page no 60.
15. Prof. K. R. Srikanta Murthy, *Vagbhatas Ashtanga Hridayam*, Chikitsa Stana; 5th Edition 2001, Krishnadas Academy Publishers; Sloka No: 58-61; PageNo-508

Cite this article as:

Prashanth A.S., Uric acid metabolism: a Prashant A.S., A Pre-test and Post-test Clinical Study Design to evaluate Ardhamatrika Nirooha Basti and Nimbamruthadi Eranda Virechana in Hyperuricemia w.s.r. to Vataraktha, *J of Ayurveda and Hol Med (JAHM)*.2020; 8(6):1-10

Source of support: Nil

Conflict of interest: None Declared